

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the replies filed on September 23, 2008, on October 10, 2008, and January 14, 2009.

Response to Arguments

2. Applicant's arguments filed on September 23, 2008 and on October 10, 2008 have been fully considered but they are not persuasive.

First of all, as a preface to all the traversals of applicant's arguments which follow, the examiner respectfully reminds applicant that claims in a pending application should be given their broadest reasonable interpretation. In re Pearson, 181 USPQ 641 (CCPA 1974).

Applicant's arguments seem to imply that Corbett fails to disclose the process steps in the same order as those presumably required by the instant invention. In response, the examiner notes, that first of all, at least as broadly interpreted as required, the inventive method steps in the instant application which have been rejected as being obvious in view of Corbett fail to clearly specify a particular order of steps. Second of all, even if the method steps as claimed DID recite steps in a particular order, absent new or unexpected results, it is considered to be prima facie obvious to change the order of steps involved in a process of making. See Ex parte Rubin, 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

In response to applicant's argument that the Corbett reference fails to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "a cast coating layer of 2-8 mm") are not recited in the rejected claims. Applicant's claims merely recite that "*a thickness of the at least one cast coating layer is in the range of 2 to 8 mm*", which limitation is *not* equivalent to a limitation specifying the cast coating layer as being 2-8 mm. The former limitation merely requires that at least one thickness of the at least one cast coating is in the specified range, not that its thickness everywhere is between 2-8 mm. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, Corbett discloses a number of embodiments where the thickness of a portion of the cast layer 2 (i.e., "a thickness" of the cast layer 2, or the thickness of the portion of the cast layer 2 between the indentation for the pipe 1 and the fibrous backing layer 6) is proportionally quite a bit less than the either the average thickness of the cast layer 2 or the average thickness of the fibrous backing layer 6. And, as previously noted, absent unexpected results, changes in size and range are generally not ordinarily a matter of invention. See *In re Rose*, 105 USPQ 237 (CCPA 1955) and *In re Yount*, 36 CCPA (Patents) 775, 171 F.2d 317, 80 USPQ 141.

The advantages of the instant advantage as stated in the specification merely point to optimization and not to unexpected results or criticality. The section of the specification at page 7, lines 20-35, pointed to by applicants as supporting unexpected results merely discusses preferable dimensions and materials and mentions general advantages of the instant invention. To establish unexpected results for claimed ranges, for example, applicant should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. In *re Hill*, 284 F.2d 955, 128 USPQ 197 (CCPA 1960). With regard to unexpected results, the advantage relied upon must be a significant advantage. See *In re Nolan*, 193, USPQ 641 (CCPA 1977). And, arguments or conclusory statements

unsupported by factual evidence are insufficient to establish unexpected results or criticality. See *In re Linder*, 173 USPQ 356 (CCPA 1972).

Thus, applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

And, applicant's arguments also do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Drawings

3. The drawings filed on January 14, 2005 are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the features canceled from the claims: the two layers of cast coating including two different grain compositions as newly recited in claims 2 and 7; the at least one cast coating including a grain composition and a bonding agent as newly recited in claim 3; and, the second layer including a finer average grain size than the first layer as newly recited in claims 7 and 16. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be

necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. Receipt and entry of the replacement abstract filed on September 23, 2008 is hereby acknowledged.
5. The replacement abstract of the disclosure is objected to because it does not avoid referring to the purported merits of the invention (i.e., in the last sentence of the abstract). Correction is required. See MPEP § 608.01(b).
6. The disclosure is objected to because of the following informalities: "the entire contents of which is" (line 4 of the newly added priority statement) should be replaced with either "the entire content of which is" or with "the entire contents of which are" for improved grammatical correctness.

Appropriate correction is required.

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: there is no proper antecedent basis in the specification for the newly introduced terms "grain compositions" and "grain composition" now appearing in claims 2, 3, 7, 16, and 17.

Claim Objections

8. Claims 1 through 5, 7 through 17, and 19 through 27 are objected to because of the following informalities, for example: "the range" [claim 1, line 12; claim 4, line 8; claim 9, line 2; claim 12, line 13; claim 21, line 2; claim 22, line 2; claim 23, line 2; claim 27, line 14] should be replaced with "a range"; "Method" [claim 2, line 1; claim 2, line 1; claim 13, line 1; claim 14, line 1; claim 15, line 1;

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claim 16, line 1; claim 17, line 1; claim 25, line 1; claim 26, line 1] should be replaced with “The method”; “Heat exchanger” [claim 5, line 1; claim 7, line 1; claim 8, line 1; claim 9, line 1; claim 10, line 1; claim 11, line 1; claim 19, line 1; claim 20, line 1; claim 21, line 1; claim 22, line 1; claim 23, line 1; claim 24, line 1] should be replaced with “The heat exchanger”; and, “a” should be inserted immediately preceding “plastic material” [claim 19, line 3; claim 20, line 3], all for improved consistency and/or grammatical correctness. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 2, 3, 7, 16, and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The limitations specifying that the cast coating layers include two layers of cast coating having a different “grain composition” or “grain compositions” as newly added to each of claims 2, 3, 7, 16, and 17 via the amendment filed on September 23, 2008 do not have any support in the originally filed disclosure, and therefore constitute new matter. The originally filed disclosure fails to even mention the composition of the grains in the cast coating layers. While the originally filed disclosure does mention grain size, grain size refers to a physical characteristic of the material whereas grain “composition” appears to refer to the chemical characteristics (i.e., chemical composition) of the grains, to which there is no reference in the originally filed disclosure. Furthermore, there is no support in the originally filed disclosure for the newly recited limitation of the second layer including a finer *average* grain size than the first layer as now newly recited in claim 7. The

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forementioned claims as amended therefore contain new matter which does not meet the written description requirement.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 2, 3, 7, and 15 through 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what exactly is meant and encompassed by the new limitations “grain compositions” [claim 2, line 3; claim 7, line 2] and “grain composition” [claim 3, line 2; claim 16, line 2; claim 17, line 1], thus rendering the metes and bounds sought by these claims as amended and all claims depending therefrom indefinite. In particular, the aforementioned terms are not art-recognized terms, fail to have proper antecedent basis in the specification, and are not described nor explained in the specification. It is not clear whether these terms are merely idiomatically improper attempts to refer to the grain size or to other physical properties of the grain structure of the cast layers or whether these terms are intended to refer to the chemical composition of the grains or to some other characteristic of the grains.

Claim 15 as amended is generally narrative, written in a run-on fashion, includes idiomatic informalities (i.e., “is titled” in line 11 of the claim), and is thus indefinite, failing to conform with current U.S. practice.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1 through 5, 7 through 12, 16, 17, 19 through 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbett (filed June 14, 2002).

Corbett (especially Figures 1c, 2a, and 2b) discloses modular thermal panels and a corresponding method of making the same, essentially as claimed, including, for example: a fibrous mat or fibrous backing layer 6 that may include wood fiber or fiberglass (i.e., glass fibers); a cementitious cast coating layer 2 in which at least one heat exchanging conduit or PEX (flexible plastic) pipe 1 is embedded, with the at least one cast coating layer 2 adhering to the fibrous mat or fibrous backing layer 6. The disclosed embodiment of Figure 1c shows two cementitious cast coating layers, 2 and 5. Aluminum hydroxide is a commonly known cement additive. While at least two branch necks per each heat exchanging conduit or PEX pipe 1 and an end connection conduit of a corresponding heat exchanger circuit are not per se disclosed by Corbett, these are implicit.

While disclosing an exemplary heat exchanger element thickness to be 3/8 inch thick and an exemplary heat exchanging conduit to be 3/8 inch PEX piping and thus within the general order of magnitude of the layer thicknesses and heat exchanger conduit sizes as recited in the claims of the instant invention, Corbett fails to disclose any of the particular cast coating layer thicknesses or the particular grain size ranges or the particular sizes of the heat exchanger conduits as recited in the claims of the instant invention. Nevertheless, absent an indication of unexpected results due to any of these, it is hereby noted that merely optimizing the thickness of the cast coating, of the size of the heat exchanging conduits, or of the grain size ranges for the cast coating layer is not inventive. Thus, it would have been obvious to one skilled in the art at the time of invention to modify the modular thermal panels of Corbett by optimizing the cast coating layer thickness and/or grain size and the size of the heat exchanging conduits in order to meet specific design requirements for a given application.

Allowable Subject Matter

15. Claims 13, 14, 25, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric whose telephone number is 571-272-4909. The examiner works a flexible work schedule but can normally be reached on most days during the work week between the hours of 10:30 a.m. and 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ljiljana (Lil) V. Ciric/

Primary Examiner, Art Unit 3744